



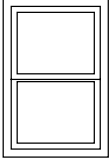
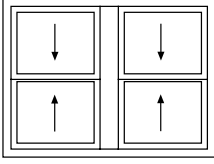
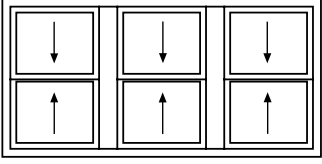
DOUBLE-HUNG

SPECIAL SIZE FRAME DIMENSIONS

Miscellaneous Formulas
East Region Only



Replacement frame double-hung windows are made to order in 1/8" increments to fit the opening. Listed below are the minimum and maximum size ranges.

SINGLE VENT UNIT	2-WIDE VENT COMPOSITE	3-WIDE VENT COMPOSITE
		
<p>MINIMUM 14-1/2" W x 23-1/2" H (368 x 597)</p> <p>MAXIMUM 48 ft² (4.46m²) 48" W x 78" H (1 219 x 1 981)</p>	<p>MINIMUM 29-1/2" W x 23-1/2" H (749 x 597)</p> <p>MAXIMUM 48 ft² (4.46m²) W < 96-1/2" (2 451) H ≤ 78" (1 981)</p>	<p>MINIMUM 44-1/2" W x 23-1/2" H (1 130 x 597)</p> <p>MAXIMUM 48 ft² (4.46m²) W < 108" (2 743) H ≤ 78" (1 981)</p>

General Notes:

- To convert areas to square meters (m²), multiply square feet by 0.0929.
- Rough Opening = Frame Dimension + 1/4".
- Keep frame dimensions to the nearest 1/8" increment.
- If glass width/height ratio is > 5:1, then unit must be tempered.
- 2-Wide High Performance limited to 71-1/2" x 71-1/2".
- Bronze annealed glass is limited to 22 ft² glass size (actual glass).
- Slope Sill Adaptor–14° angle.

Full Screen:

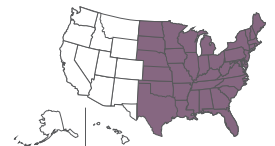
- Full Screen–If unit frame dimensions are >39" wide or > 53-1/2" high, spreader bar is included.
- Two (2) plungers FH ≤ 51-1/2"
- Four (4) plungers FH > 51-1/2"

Miscellaneous Formulas

	SINGLE VENT UNIT	2-WIDE VENT UNIT	3-WIDE VENT UNIT
VISIBLE GLASS	VGW = FW - 6-1/4"	VGW = (FW / 2) - 6-3/4"	VGW = (FW / 3) - 7-1/4"
	VGH = (FH / 2) - 4"	VGH = (FH / 2) - 4"	VGH = (FH / 2) - 4"
ACTUAL GLASS	AGW = FW - 5-1/4"	AGW = (FW / 2) - 5-1/2"	AGW = (FW / 3) - 5-9/16"
	AGH = (FH / 2) - 3"	AGH = (FH / 2) - 3"	AGH = (FH / 2) - 3"
CLEAR OPENING	Equal Divided = (FW - 4-5/8) x (FH / 2 - 5-11/16) / 144	Equal Divided = (FW / 2 - 4-7/8) x (FH / 2 - 5-11/16) / 144	Equal Divided = (FW / 3 - 4-15/16) x (FH / 2 - 5-11/16) / 144

KEY:

AGW = Actual Glass Width
AGH = Actual Glass Height
FW = Frame Width
FH = Frame Height
VGW = Visible Glass Width
VGH = Visible Glass Height



East Region Only



DOUBLE-HUNG

SIZE TABLES

4-3/16" New Construction Frame
East Region Only



1-Wide Vent

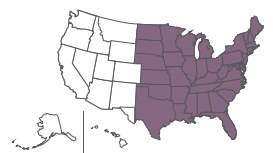
	(610) (597)	(710) (699)	(762) (749)	(813) (800)	(914) (902)	(965) (953)	(1 016) (1 003)
Opening	2' 0"	2' 4"	2' 6"	2' 8"	3' 0"	3' 2"	3' 4"
Frame	23 1/2"	27 1/2"	29 1/2"	31 1/2"	35 1/2"	37 1/2"	39 1/2"
(914) (902)	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"	3' 0"
(965) (953)	3' 2"	3' 2"	3' 2"	3' 2"	3' 2"	3' 2"	3' 2"
(1 067) (1 054)	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"	3' 6"
(1 160) (1 156)	3' 10"	3' 10"	3' 10"	3' 10"	3' 10"	3' 10"	3' 10"
(1 219) (1 207)	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"	4' 0"
(1 321) (1 308)	4' 4"	4' 4"	4' 4"	4' 4"	4' 4"	4' 4"	4' 4"
(1 372) (1 359)	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"	4' 6"
(1 524) (1 511)	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"	5' 0"
(1 575) (1 562)	5' 2"	5' 2"	5' 2"	5' 2"	5' 2"	5' 2"	5' 2"
(1 676) (1 664)	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"	5' 6"
(1 829) (1 816)	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"	6' 0"
	71 1/2"	71 1/2"	71 1/2"	71 1/2"	71 1/2"	71 1/2"	71 1/2"

Fixed Units

	(1 219) (1 207)	(1 372) (1 359)	(1 524) (1 511)
Opening	4' 0"	4' 6"	5' 0"
Frame	47 1/2"	53 1/2"	59 1/2"
(914) (902)	3' 0"	3' 0"	3' 0"
(965) (953)	3' 2"	3' 2"	3' 2"
(1 067) (1 054)	3' 6"	3' 6"	3' 6"
(1 160) (1 156)	3' 10"	3' 10"	3' 10"
(1 219) (1 207)	4' 0"	4' 0"	4' 0"
(1 321) (1 308)	4' 4"	4' 4"	4' 4"
(1 372) (1 359)	4' 6"	4' 6"	4' 6"
(1 524) (1 511)	5' 0"	5' 0"	5' 0"
(1 575) (1 562)	5' 2"	5' 2"	5' 2"
(1 676) (1 664)	5' 6"	5' 6"	5' 6"
(1 829) (1 816)	6' 0"	6' 0"	6' 0"
	71 1/2"	71 1/2"	71 1/2"

Egress Notes:

Check all applicable local codes for emergency egress requirements.
 E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
 E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².
 See Design Data pages in this section for clear opening dimensions.



East Region Only



DOUBLE-HUNG

SIZE TABLES

4-3/16" New Construction Frame - Composite with Integral Mullion
East Region Only

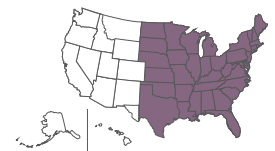


2-Wide Vent Composites with Integral Mullion

	(1 219) (1 207)	(1 422) (1 410)	(1 524) (1 511)	(1 626) (1 613)	(1 829) (1 816)	(1 930) (1 918)	(2 032) (2 019)
Opening	4' 0"	4' 8"	5' 0"	5' 4"	6' 0"	6' 4"	6' 8"
Frame	47 1/2"	55 1/2"	59 1/2"	63 1/2"	71 1/2"	75 1/2"	79 1/2"
(914) (902)							
(965) (953)							
(1 067) (1 054)							
(1 160) (1 156)							
(1 219) (1 207)							
(1 321) (1 308)							
(1 372) (1 359)							
(1 524) (1 511)							
(1 575) (1 562)							
(1 676) (1 664)							
(1 829) (1 816)							

Egress Notes:

Check all applicable local codes for emergency egress requirements.
 E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
 E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².
 See Design Data pages in this section for clear opening dimensions.



East Region Only



DOUBLE-HUNG

SIZE TABLES

4-3/16" New Construction Frame - Composite with Integral Mullion
East Region Only

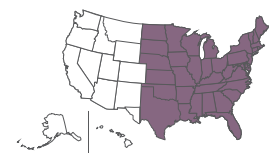


3-Wide Vent Composites with Integral Mullion

	(1 829) (1 816)	(2 134) (2 121)	(2 438) (2 426)	(2 438) (2 426)	(2 743) (2 731)		
Opening	6' 0"	7' 0"	7' 6"	8' 0"	9' 0"		
Frame	71 1/2"	83 1/2"	89 1/2"	95 1/2"	107 1/2"		
(914) (902)	3' 0"	35 1/2"					
(965) (953)	3' 2"	37 1/2"					
(1 067) (1 054)	3' 6"	41 1/2"					
(1 160) (1 156)	3' 10"	45 1/2"					
(1 219) (1 207)	4' 0"	47 1/2"					
(1 321) (1 308)	4' 4"	51 1/2"					
(1 372) (1 359)	4' 6"	53 1/2"					
(1 524) (1 511)	5' 0"	59 1/2"					
(1 575) (1 562)	5' 2"	61 1/2"					
(1 676) (1 664)	5' 6"	65 1/2"					
(1 829) (1 816)	6' 0"	71 1/2"					

Egress Notes:

Check all applicable local codes for emergency egress requirements.
 E = Window meets minimum clear opening of 24" height, 20" width, and 5.7 ft².
 E1 = Window meets minimum clear opening of 24" height, 20" width, and 5.0 ft².
 See Design Data pages in this section for clear opening dimensions.



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